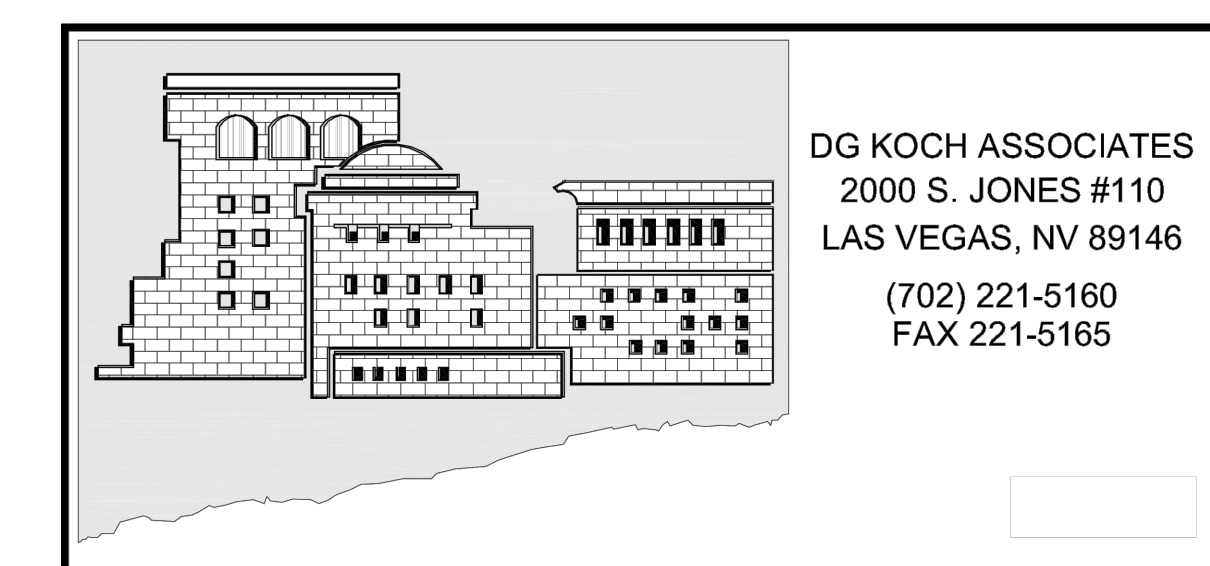
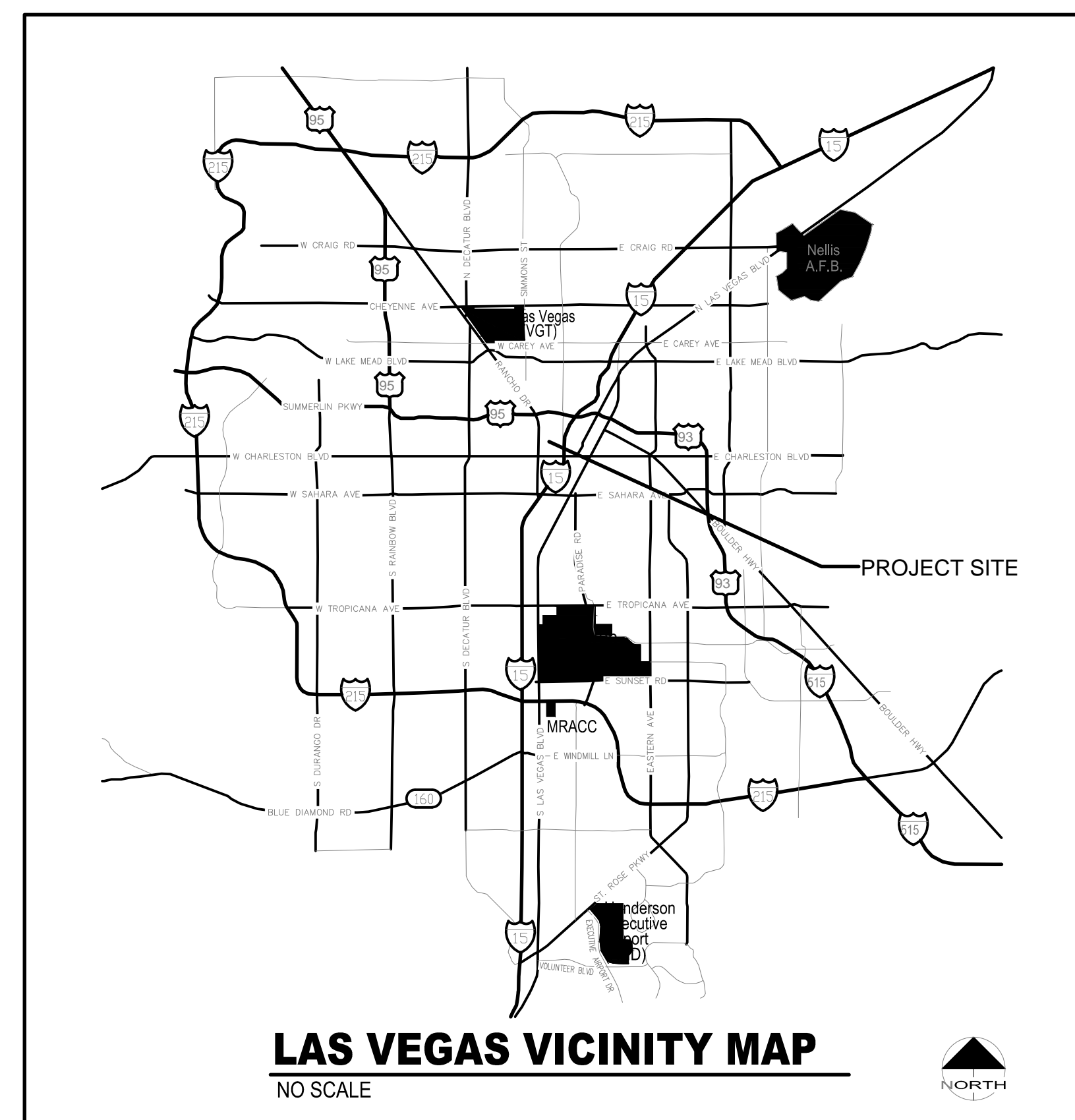


MEDICAL AIR PUMP REPLACEMENT



1800 W. CHARLESTON BOULEVARD
LAS VEGAS, NEVADA 89102



- SPECIAL CONDITIONS:**
- CONTRACTOR TO PRESENT PROJECT SCHEDULE WITH TIMELINES AS PART OF THE BID.
 - PROJECT SCHEDULE NOT TO EXCEED (18) EIGHTEEN WEEKS FROM THE DATE THE PROJECTS IS AWARDED TO CONTRACTOR.
 - CONTRACTOR SHALL MAINTAIN EXISTING EQUIPMENT FULLY FUNCTIONAL UNTIL NEW EQUIPMENT IS FULLY INSPECTED, TESTED AND ACCEPTED BY THE OWNER.

- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOOK THROUGH ALL DRAWINGS ASSOCIATED WITH THIS PROJECT. WORK ASSOCIATED WITH THE ELECTRICAL CONTRACTOR'S TRADE MAY BE SHOWN ON OTHER DRAWINGS. ANY ADDITIONAL COST RESULTING FROM THE FAILURE TO INCLUDE THESE ITEMS SHOWN ON THE OTHER DRAWINGS WILL BE INCURRED BY CONTRACTOR.
- IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO ESTABLISH A STANDARD OF QUALITY. THE ENGINEER RESERVES THE RIGHT TO ALLOW OTHER METHODS AND MATERIALS NOT REFLECTED HEREIN. THE CONTRACTOR OR ENGINEER WAIVES THE STANDARDS TO ALLOW ALTERNATE MEANS AND METHODS PRIOR TO BEGINNING THE PROJECT. CONTRACT DOCUMENT REVISIONS TO ACCOMMODATE INSTALLED CONDITIONS, WITHOUT PRIOR APPROVAL, WILL RESULT IN ADDITIONAL DESIGN CHARGES TO THE CONTRACTOR.
- ELECTRICAL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE NECA INSTALLATION STANDARDS TO THE SATISFACTION OF THE ARCHITECT AND ENGINEER.
- ALL WORK, MATERIALS AND EQUIPMENT SHALL CONFORM TO THE CURRENTLY ADOPTED EDITION OF ALL APPLICABLE NATIONAL, STATE AND CITY CODES AND ORDINANCES.
- ALL ELECTRICAL SYSTEM COMPONENTS SHALL BE LISTED OR LABELED BY UL OR OTHER RECOGNIZED TESTING FACILITY AS ALLOWED BY AUTHORITY HAVING JURISDICTION.
- WHERE AN APPARENT DISCREPANCY EXISTS BETWEEN THE REQUIREMENTS OF THE GENERAL NOTES AND INFORMATION PORTRAYED IN THE ELECTRICAL DRAWINGS, THE CONTRACTOR SHALL INCLUDE IN THE BID THE COST OF THE GREATER QUALITY OR QUANTITY.
- CONTRACTOR SHALL VISIT JOB SITE PRIOR TO BID AND VERIFY EXISTING CONDITIONS.
- CONTRACTOR SHALL INCLUDE IN BASE BID ALL COSTS REQUIRED FOR PERMITS AND INSPECTIONS.
- CONTRACTOR SHALL VERIFY, WITH OWNER'S REPRESENTATIVE PRIOR TO SUBMITTING BID, ALLOWABLE WORKING HOURS, EMPLOYEE PARKING AREAS, MATERIAL DELIVERY, STORAGE REQUIREMENTS, DEMOLITION AND REMOVAL OF CONSTRUCTION DEBRIS, AS WELL AS DAILY CLEAN UP REQUIREMENTS. INCLUDE ALL COSTS IN BID FOR DUST BARRIERS, DUMPSTERS ETC. AS REQUIRED FOR THE DURATION OF THE PROJECT. PERFORM ALL WORK AS DIRECTED BY OWNER'S REPRESENTATIVE AND ARCHITECT.
- ALL ELECTRICAL SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE ALL NECESSARY CORRECTIONS AT NO ADDITIONAL COST TO OWNER.
- CONTRACTOR SHALL GUARANTEE ALL WORK AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP WHICH MAY OCCUR UNDER NORMAL USE FOR A PERIOD OF ONE YEAR AFTER OWNER'S ACCEPTANCE. ALL DEFECTS SHALL BE PROMPTLY CORRECTED BY CONTRACTOR WITHOUT ADDITIONAL COST TO OWNER.
- PROVIDE AS-BUILT DRAWINGS TO ARCHITECT. DRAWINGS SHALL INCLUDE ACCURATE CONDUIT AND DEVICE LOCATIONS DIMENSIONED FROM PERMANENT LANDMARKS SUCH AS BUILDING WALLS.
- DO NOT SCALE ELECTRICAL DRAWINGS. VERIFY EXACT LOCATION OF ALL DEVICES, JUNCTION BOXES, LIGHTING FIXTURES, ETC. WITH ARCHITECTURAL AND INTERIOR DESIGN DRAWINGS PRIOR TO INSTALLATION. CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL MECHANICAL EQUIPMENT AND OTHER EQUIPMENT REQUIRING ELECTRICAL CONNECTION PRIOR TO ROUGH-IN. EVERY OUTLET HEIGHT SHALL BE VERIFIED ON EACH WALL WITH THE INTERIOR PLANNING AND DESIGN DRAWINGS. COORDINATE WITH CABINET SHOP DRAWINGS TO ENSURE PROPER HEIGHT AND LOCATION WITH RESPECT TO MILLWORK, EQUIPMENT, ETC.
- THESE DRAWINGS INDICATE THE FINISHED REQUIREMENTS FOR THE ELECTRICAL SYSTEMS, EQUIPMENT, LIGHTING FIXTURES, OUTLETS AND DEVICES. DUE TO STRUCTURAL CONDITIONS, MECHANICAL DUCT, PIPING CONFLICTS, OR OTHER LEGITIMATE REASONS, THE CONTRACTOR MAY DESIRE TO INSTALL THE WORK INDICATED IN A MANNER DIFFERENT FROM THAT SHOWN. SUCH CHANGES SHALL BE PRESENTED TO THE OWNER'S REPRESENTATIVE FOR REVIEW AND APPROVAL PRIOR TO PROCEEDING. UPON APPROVAL, THE WORK SHALL BE PERFORMED AND THE AS-BUILT DRAWINGS SHALL BE REVISED TO ACCURATELY REFLECT THE WORK AS ACTUALLY INSTALLED.
- ANY VARIANCE OR EXCEPTIONS THE THE DRAWINGS AND SPECIFICATIONS MUST BE REQUESTED AND APPROVED IN WRITING BY THE ENGINEER. WHERE UNAUTHORIZED CHANGES ARE FOUND, THE CONTRACTOR SHALL REMOVE THE INSTALLED WORK AND INSTALL ITS AS SHOWN ON THE DRAWINGS AT NO ADDITIONAL COST TO THE OWNER. COST SHALL INCLUDE ANY CUTTING, PATCHING, PAINTING AND REPAIR COST TO INSTALLED CEILINGS, WALLS ETC. AS REQUIRED FOR CORRECTING THE DEFICIENCY.
- RACEWAY SYSTEMS ARE SHOWN DIAGRAMMATICALLY. ACTUAL LOCATION AND ROUTING OF ALL, SHALL BE DETERMINED BY CONTRACTOR TO SUIT FIELD CONDITIONS.
- RACEWAYS SHALL BE INSTALLED CONCEALED WHENEVER POSSIBLE. RACEWAYS INSTALLED EXPOSED (AS APPROVED BY ENGINEER IN WRITING PRIOR TO ROUGH-IN) SHALL BE ROUTED OUT OF PUBLIC VIEW AS MUCH AS POSSIBLE. RACEWAYS SHALL BE RUN PARALLEL WITH, OR AT RIGHT ANGLE TO WALLS.
- PROVIDE UL APPROVED EXPANSION FITTINGS WHERE RACEWAYS CROSS BUILDING EXPANSION JOINTS. PROVIDE BONDING JUMPER(S) SIZED PER CODE WHERE REQUIRED. PROVIDE ALL FITTINGS REQUIRED FOR A COMPLETE INSTALLATION. REFER TO ARCHITECTURAL DRAWINGS FOR EXPANSION JOINT LOCATION(S).
- CONTRACTOR SHALL PROVIDE ALL RACEWAY SYSTEMS INDICATED ON THE DRAWING PER NEC REQUIREMENTS AND GENERAL NOTES. ANY DEVIATION FROM THE WIRING METHODS INDICATED SHALL BE ALLOWED ONLY BY SPECIAL APPROVAL FROM EITHER THE ARCHITECT, ENGINEER OR OWNER. CONTRACTOR'S BID SHALL INCLUDE ALL COSTS FOR RACEWAY SYSTEMS AS SPECIFIED UNLESS SPECIFIC WRITTEN APPROVAL FOR AN ALTERNATIVE WIRING METHOD IS OBTAINED FROM EITHER THE ARCHITECT, ENGINEER OR OWNER AND IS SUBMITTED AS PART OF CONTRACTOR'S FORMAL BID PROPOSAL.
- PRIOR TO INSTALLATION, CONTRACTOR SHALL REVIEW THE COMPLETE SET OF CONSTRUCTION DOCUMENTS FOR CONFLICTS WITH OTHER TRADES. CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ALL WORK WITH OTHER TRADES TO AVOID CONFLICT DURING INSTALLATION. CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS IN EQUIPMENT LOCATION AND ROUTING AS NECESSARY AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR SHALL BE RESPONSIBLE TO PROPERLY CUT AND PATCH EXISTING CONSTRUCTION AS REQUIRED TO INSTALL NEW ELECTRICAL WORK. ALL PATCHING SHALL BE OF THE SAME MATERIALS. WORKMANSHIP AND FINISH AS THE EXISTING WORK AND SHALL ACCURATELY MATCH ALL SURROUNDING WORK TO THE SATISFACTION OF THE ARCHITECT.
- ALL ELECTRICAL EQUIPMENT SHALL HAVE SUFFICIENT GUTTER SPACE AND LUGS TO ACCOMMODATE QUANTITY AND SIZE OF CONDUCTORS REQUIRED. CONTRACTORS SHALL PROVIDE EQUIPMENT WITH OVERSIZED ENCLOSURES WHERE REQUIRED.
- COORDINATE ELECTRICAL REQUIREMENTS FOR ALL PLUMBING AND MECHANICAL EQUIPMENT WITH FINAL CONTRACTOR SELECTION. THE CONTRACTOR SHALL SIZE DISCONNECTS BASED UPON CIRCUIT BREAKER RATINGS AND PROVIDE FUSING AS REQUIRED PER EQUIPMENT MANUFACTURER RECOMMENDATIONS AND U.L. LISTING REQUIREMENT.
- SIZING OF MOTOR-RELATED ELECTRICAL COMPONENTS, INCLUDING FEEDER AND/OR BRANCH CIRCUITS (WIRE AND CONDUIT) AND OVERCURRENT PROTECTION (BREAKER AND/OR FUSES) IS BASED ON RATINGS INDICATED IN THE CONTRACT DOCUMENTS AS WELL AS NEC APPROXIMATED LOADS FOR A GIVEN MOTOR HORSEPOWER, VOLTAGE AND PHASE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ACTUAL MOTOR AND APPLIANCE RATINGS AND LOADS. CONTRACTOR TO PROVIDE CORRECTLY SIZED MOTOR OVERLOAD ELECTRICAL COMPONENTS BASED ON NAMEPLATE RATING. REFLECT ALL CHANGES IN THE AS-BUILT DRAWINGS.
- THE ELECTRICAL CONTRACTOR PRIOR TO ROUGH-IN, SHALL VERIFY ALL HVAC AMPERAGES, PHASES AND VOLTAGES AGAINST PLAN REQUIREMENTS AND NOTIFY ENGINEER/ARCHITECT OF ANY DISCREPANCIES. FAILURE TO VERIFY AND NOTIFY ENGINEER/ARCHITECT PRIOR TO ROUGH-IN SHALL RESULT IN THE ELECTRICAL CONTRACTOR ASSUMING RESPONSIBILITY FOR DESIGN AND INSTALLATION REQUIREMENTS.
- THE ELECTRICAL CONTRACTOR SHALL INSURE FINAL COORDINATION OF THE MANUFACTURERS RECOMMENDED FUSE SIZES FOR THE INSTALLED MECHANICAL EQUIPMENT WITH THE SIZE DISCONNECT PRIOR TO OR DURING ROUGH-IN. ADVISE ENGINEER IF CHANGES IN THE FINAL SELECTION OF MECHANICAL EQUIPMENT HAVE IMPACTED DISCONNECT SWITCH, BREAKER, OR CONDUCTOR SIZES.
- CONTRACTOR SHALL ENGAGE THE SERVICES FOR A STATE LICENSED FIRE ALARM MANUFACTURER/INSTALLER TO PREPARE ALL DESIGN DRAWINGS AND CALCULATIONS REQUIRED FOR SYSTEM APPROVAL BY THE AUTHORITY HAVING JURISDICTION. SUBMIT ALL PLANS AND PROVIDE ALL PERMITS REQUIRED FOR A COMPLETE AND OPERABLE APPROVED LIFE SAFETY SYSTEM.
- ALL PENETRATIONS OF FIRE RESISTIVE FLOORS OR WALLS SHALL BE PROTECTED BY MATERIALS AND INSTALLATION DIAGRAMS THAT CONFORM TO UL LISTING FOR "THROUGH-PENETRATION FIRE STOP SYSTEMS".
- WHERE MOTORS ARE INSTALLED IN SUSPENDED CEILINGS, CONTRACTOR SHALL PROVIDE DISCONNECT SWITCH IN SUSPENDED CEILING WITHIN REACH FROM ACCESS POINT.
- VERIFY DEVICE COLOR AND MOUNTING ORIENTATION (VERTICAL OR HORIZONTAL) WITH ARCHITECTURAL AND INTERIOR DESIGN DRAWINGS PRIOR TO ORDERING ANY EQUIPMENT AND PROVIDE DEVICES AS REQUIRED, UNLESS NOTED OTHERWISE, DEVICES AND DEVICE PLATES SHALL BE WHITE IN COLOR.
- PROVIDE TYPED UPDATED PANEL DIRECTORY TO BE MOUNTED ON INSIDE OF ALL PANEL DOOR COVERS. DIRECTORY SHALL REFLECT ALL ADDITIONS OR MODIFICATIONS TO EXISTING PANELS AND SHALL REFLECT ACTUAL 'AS-BUILT' CONDITIONS.
- ALL NEW PANELBOARDS AND SWITCHBOARDS SHALL BE OF THE SAME MANUFACTURER AND HAVE LOCKING DOORS AND BE KEYPED THE SAME U.N.O.
- UPON COMPLETION OF THE INSTALLATION OF LIFE SAFETY SYSTEM WIRING AND DEVICES, A PERFORMANCE TEST OF THE ENTIRE LIFE SAFETY SHALL BE PERFORMED TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION.
- ALL EQUIPMENT ELECTRICAL TERMINATIONS TO UNDERGO A TORQUE TEST. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR MANUFACTURER'S RECOMMENDED TORQUE DOCUMENTATION AND TOOLS TO PERFORM TORQUE TEST.
- FLOOR MOUNTED ELECTRICAL EQUIPMENT SHALL BE MOUNTED ON A 4" HIGH CONCRETE PAD.
- INSTALL TRANSFORMER FOLLOWING MANUFACTURER'S RECOMMENDATIONS FOR VENTILATION CLEARANCES.
- FURNISH AND INSTALL A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM IN ACCORDANCE WITH PLANS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL COORDINATE WITH THE OWNER, ARCHITECT AND ENGINEER AS REQUIRED SHUT-DOWNS OR TIE-INS RELATING TO THESE SYSTEMS. REQUESTS FOR SHUTDOWNS SHALL BE SUBMITTED IN WRITING AT LEAST ONE WEEK IN ADVANCE FOR APPROVAL BY THE OWNER.
- ALL EXPOSED RACEWAYS SHALL BE PAINTED TO MATCH ADJACENT SURFACES.
- THE ELECTRICAL CONTRACTOR ASSUMES ALL RESPONSIBILITY AND LIABILITY FOR ANY "VALUE ENGINEERING" OF THE MATERIALS, SPECIFICATIONS AND DESIGN OF THIS PROJECT, INCLUDING ANY AND ALL COST FOR ANY REVISIONS TO THE CONTRACT DOCUMENTS REQUIRED AS A RESULT IF THE "VALUE ENGINEERING".
- PROPOSED ALTERNATE LIGHT FIXTURES SHALL BE SUBMITTED WITH A PHOTOMETRIC STUDY SHOWING COMPLIANCE WITH ALL APPLICABLE LIGHTING CODES AND ORDINANCES.
- AFTER COMPLETION OF THE INSTALLATION, THE ENTIRE ELECTRICAL SYSTEM SHALL BE THOROUGHLY CLEANED, REMOVE ALL FOREIGN MATERIAL, DUST, PAINT, OIL GREASE, UNNEEDED LABELS AND STICKERS FROM EQUIPMENTS. REMOVE ALL DEBRIS ACCUMULATED DURING CONSTRUCTION.

ELECTRICAL LEGEND:							
EXT	DEMO	NEW	DEFINITION	EXT	DEMO	NEW	DEFINITION
			PANELBOARD SURFACE MOUNTED				CONDUIT SEALING FITTING (USED FOR CLARITY ONLY)
			PANELBOARD FLUSH MOUNTED				INTERRUPTER SWITCH
			SWITCHBOARD				FUSE
			TERMINAL CABINET				CIRCUIT BREAKER
			TRANSFORMER				DRAWOUT CIRCUIT BREAKER
			PULLBOX				METERING
			MOTOR STARTER				KILOWATT HOUR DEMAND METER
			COMBINATION MOTOR STARTER				TRANSFORMER
			COMBINATION MOTOR STARTER VENDOR FURNISHED				MOTOR OUTLET
			DISCONNECT SWITCH "F" INDICATES FUSIBLE				GENERATOR
			DISCONNECT SWITCH VENDOR FURNISHED				GROUND ROD
			CONTRACTOR				SOLENOID VALVE
			CONTRACTOR VENDOR FURNISHED				SPEAKER
			TELEPHONE TERMINAL BOARD 4 X 8 X 3/4" FIRE TREATED PLYWOOD				MOTION DETECTOR
			TELEPHONE TERMINAL CABINET				CCTV SURVEILLANCE CAMERA OUTLET
			FLUORESCENT FIXTURE - LETTER DENOTES TYPE (LOWER CASE LETTER DENOTES SWITCHING), NUMBER DENOTES CIRCUIT				TELEVISION ANTENNA OUTLET
			WALL MOUNTED FIXTURE (FLUORESCENT SHOWN) - LETTER DENOTES TYPE				PULL STATION
			HID OR INCANDESCENT FIXTURE - LETTER DENOTES TYPE				FLOW SWITCH
			FLUORESCENT STRIP FIXTURE - LETTER DENOTES TYPE				TAMPER SWITCH
			TRACK LIGHTING - LETTER DENOTES TYPE				HORN
			EMERGENCY LIGHTING UNIT - LETTER DENOTES TYPE				HORN / STROBE
			EXIT FIXTURE - SHADED AREA DENOTES LIGHTED FACE, ARROWS DENOTE DIRECTION - LETTER DENOTES TYPE				STROBE
			EMERGENCY OR NIGHT LIGHT CONNECTED FIXTURE (FLUORESCENT SHOWN) - LETTER DENOTES TYPE				FIRE ALARM CONTROL PANEL
			POLE MOUNTED HID AREA LIGHT - LETTER DENOTES TYPE				FIRE ALARM ANNUNCIATOR
			SPORTS FIELD POLE ASSEMBLY				DOOR HOLDER
			SINGLE RECEPTACLE 18" AFF UNLESS NOTED OTHERWISE				SMOKE DETECTOR LETTER (X) INDICATES TYPE.
			DUPLEX RECEPTACLE 18" AFF UNLESS NOTED OTHERWISE				D DUCT MOUNT
			FLOOR MOUNTED DUPLEX RECEPTACLE				I IONIZATION
			QUADRUPLEX RECEPTACLE 18" AFF UNO				P PHOTOELECTRIC
			ISOLATED GROUND TYPE (ORANGE) DUPLEX RECEPTACLE AT 18" AFF UNO.				HEAT DETECTOR LETTER (X) INDICATES TYPE.
			ISOLATED GROUND TYPE (ORANGE) QUADRUPLEX RECEPTACLE AT 18" AFF UNO.				R RATE OF RISE
			COUNTER HEIGHT RECEPTACLE (VERIFY HEIGHT)				F FIXED TEMPERATURE
			GFI DUPLEX RECEPTACLE 18" AFF UNLESS NOTED OTHERWISE				FIREMAN PHONE
			SWITCHED DUPLEX RECEPTACLE 18" AFF UNLESS NOTED OTHERWISE				SMOKE /FIRE DAMPER
			ELECTRIC SHEET NOTE DESIGNATION				CONTROL DEVICE. LETTERS INDICATE TYPE: FLS = FLOAT SWITCH, FS = FLOW SWITCH FTS = FOOT SWITCH, LS = LIMIT SWITCH PE = PNEUMATIC SWITCH, PS = PRESSURE SWITCH TS = TEMPERATURE SWITCH
			MECHANICAL EQUIPMENT CROSS REFERENCE				THERMOSTAT
			SPECIAL PURPOSE RECEPTACLE - NUMBER REFERS TO RECEPTACLE SCHEDULE				JUNCTION BOX (USED FOR CLARITY ONLY)
			CLOCK OUTLET				AMMETER
			MULTIOUTLET ASSEMBLY - ARROW HEADS INDICATE EXTENT, NUMBERS INDICATE SPACING IN INCHES				AMMETER SWITCH
			SINGLE POLE SWITCH 48" AFF UNO				VOLTMETER
			THREE WAY SWITCH 48" AFF UNO				VOLTMETER SWITCH
			FOUR WAY SWITCH 48" AFF UNO				RELAY OR CONTROL DEVICE. NUMBER REPRESENTS STANDARD DEVICE FUNCTION
			KEY OPERATED SWITCH				SHUNT TRIP
			DIMMER OPERATED SWITCH				GROUND FAULT INTERRUPTER
			SWITCH WITH PILOT LIGHT	ABBREVIATIONS:			
			MOTION SENSING SWITCH				
			CONTROL STATION				
			TELEPHONE OUTLET 18" AFF UNO				
			PAY TELEPHONE OUTLET 48" AFF UNO				
			FLOOR MOUNTED TELEPHONE OUTLET				
			COMPUTER OUTLET OR SPECIAL PURPOSE COMMUNICATIONS				
			RADIO OUTLET				
			PHOTOELECTRIC CELL				
			TIME CLOCK				
			BRANCH CIRCUIT CONSISTING OF 2#12 IN MINIMUM SIZE CONDUIT NOT INCLUDING GROUND WIRE				
			HOME RUN TO PANELBOARD OR DEVICE - NUMBER OF ARROW HEADS INDICATES NUMBER OF CIRCUITS				
			BRANCH CIRCUIT - SHORT SLASHES INDICATE NUMBER OF PHASE OR SWITCH LEGS, LONG SLASHES INDICATE NUMBER OF NEUTRALS, LONG SLASH W/ A DOT INDICATES A SEPARATE ISOLATED GROUND WIRE.				
			CONDUIT IN SLAB OR UNDERGROUND				

AFF	ABOVE FINISHED FLOOR	J-BOX	JUNCTION BOX
AFG	ABOVE FINISHED GRADE	KVA	KILOVOLT AMPS
AL	ALUMINUM	KW	KILOWATT
BKR	BREAKER	LTG	LIGHTING
C	CONDUIT	NTS	NOT TO SCALE
CKT	CIRCUIT	PNL	PANEL
C.O.	CONDUIT ONLY	PWR	POWER
CU	COPPER	TYP	TYPICAL
DWG	DRAWING	UNO	UNLESS NOTED OTHERWISE
ELEC	ELECTRICAL	V	VOLTS
EXT	EXISTING	VA	VOLT AMPS
GFI	GROUND FAULT INTERRUPT	WP	WEATHER PROOF
GND	GROUND	XF	TRANSFORMER

SHEET INDEX	
SHEET NUMBER	SHEET TITLE
EG0.00	COVER SHEET
EG1.01	ELECTRICAL LEGEND, ABBREVIATIONS AND SHEET INDEX
EG1.02	ELECTRICAL SPECIFICATIONS
E2.01	ELECTRICAL PLAN BASEMENT
E4.00	ELECTRICAL DETAILS
E4.01	ELECTRICAL DETAILS
E5.01	ELECTRICAL ONE LINE DIAGRAM

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September 21, 2015

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Project

UMC

NORTHEAST BUILDING MEDICAL AIR PUMPS
UNIVERSITY MEDICAL CENTER
LAS VEGAS, NEVADA

Drawing Title:

ELECTRICAL
SPECIFICATIONS

Revisions:

Date:

04-17-15

HSAA Project:

CADD Files:

Drawing Number:

EG1.02

ELECTRICAL SPECIFICATIONS
SECTION 16000
PROJECT NUMBER 15038

PART 1 - GENERAL REQUIREMENTS:

1.1 DESCRIPTION

A SCOPE: THE ELECTRICAL WORK CONSISTS OF FURNISHING EVERYTHING NECESSARY FOR AND INCIDENTAL TO THE EXECUTION AND COMPLETION OF ALL ELECTRICAL WORK INDICATED ON THE DRAWINGS AND SPECIFIED BELOW INCLUDING BUT NOT LIMITED TO:

1. ELECTRICAL PANELS, CONTROLS SERVICE, DISCONNECTS, CONDUITS, WIRING, ETC. FOR ALL OUTLETS AND EQUIPMENT.

2. CONTROL WIRING FOR ELECTRICAL SYSTEMS.

B THE DRAWINGS ARE DIAGRAMMATIC UNLESS INDICATED OTHERWISE. THE DRAWINGS REFLECT CIRCUITING ONLY AND ARE NOT DEPICTING EXACT CONDUIT ROUTING UNLESS SPECIFICALLY NOTED OTHER WISE.

1. DATA PRESENTED ON THESE DRAWINGS ARE AS ACCURATE AS PLANNING CAN DETERMINE, BUT FIELD VERIFICATION OF ALL DIMENSIONS, LOCATIONS, LEVELS, ETC., TO SUIT FIELD CONDITIONS IS REQUIRED. DISCREPANCIES BETWEEN DIFFERENT PLANS, OR BETWEEN DRAWINGS AND SPECIFICATIONS, OR REGULATIONS AND CODES GOVERNING THE INSTALLATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING BEFORE THE DATE OF BID OPENING. IF DISCREPANCIES ARE NOT REPORTED, THE CONTRACTOR SHALL BID THE GREATER QUANTITY OR BETTER QUALITY, AND APPROPRIATE ADJUSTMENTS WILL BE MADE AFTER CONTRACT AWARD. CONTRACTOR SHALL BE RESPONSIBLE TO FIELD MEASURE AND CONFIRM MOUNTING HEIGHTS AND LOCATION OF ELECTRICAL EQUIPMENT WITH RESPECT TO COUNTERS, RADIATION, ETC. DO NOT SCALE DISTANCES OFF THE ELECTRICAL DRAWINGS. USE ACTUAL BUILDING DIMENSIONS.

C EXAMINE ALL DRAWINGS FOR WORK REQUIRED BY THIS SUBCONTRACTOR.

1.2 CODES

A ALL WORK SHALL BE IN ACCORDANCE WITH THE NEC AND LOCAL GOVERNING CODES.

1. ALL OFF SITE WORK SHALL BE IN ACCORDANCE WITH THE UNIFORM STANDARD DRAWINGS FOR CLARK COUNTY AREA.

1.3 SUBSTITUTIONS

A CONTRACTOR'S BID PRICE SHALL REFLECT THE COSTS OF ALL MATERIALS AS SPECIFIED. NO PRIOR APPROVAL OF MATERIALS WILL BE GIVEN PRIOR TO AWARD OF BID. ALL SWITCHGEAR AND PANELBOARDS SHALL BE FURNISHED BY A SINGLE MANUFACTURER.

B SUBSTITUTIONS OF EQUAL QUALITY AND OF BENEFIT TO THE OWNER WILL BE EVALUATED AT THE CONTRACTOR'S REQUEST. ANY ADDITIONAL COST TO THE OWNER FOR REVIEW OF SUBSTITUTIONS WILL BE AT THE CONTRACTOR'S EXPENSE.

C AFTER REVIEW OF SUBSTITUTES, THE DECISION OF THE ENGINEER IN DETERMINING EQUAL MATERIALS WILL BE FINAL.

1.4 SUBMITTALS

A PROVIDE SUBMITTALS FOR THE FOLLOWING EQUIPMENT:

1. MOTOR STARTERS

2. DISCONNECTS

3. CIRCUIT BREAKERS

4. WIRE

B SHOP DRAWINGS AND APPROVALS

1. THE CONTRACTOR SHALL SUBMIT SIX (6) IDENTICALLY BOUND SETS OF SHOP DRAWINGS ON THE FOLLOWING ITEMS:

a. OUTLINE DRAWINGS AND DATA SHEETS OF EACH CIRCUIT BREAKER, DISCONNECT.

i) HIGHLIGHT SERVICE CONDITIONS OF EQUIPMENT AND THE APPROPRIATE DERATING TO MEET 2.1.B.

b. DATA SHEETS OF ALL WIRING DEVICES, LIGHTING FIXTURES, AND FUSES.

1.5 QUALITY ASSURANCE

A ALL WORK SHALL BE COMPLETED IN A NEAT AND WORKMANLIKE MANNER AND IN ACCORDANCE WITH NECA STANDARDS.

B ALL WORK SHALL BE SUBJECT TO INSPECTION AND POSSIBLE REJECTION IF NOT IN ACCORDANCE WITH THESE SPECIFICATIONS, THE DRAWINGS, AND INSTALLED IN NEAT AND WORKMANLIKE MANNER.

C ANY REJECTED WORK SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.

PART 2 - PRODUCTS:

2.1 MATERIAL AND EQUIPMENT

A MATERIAL AND EQUIPMENT SHALL BE NEW AND OF CURRENT PRODUCTION BY MANUFACTURERS REGULARLY ENGAGED IN THE MANUFACTURE OF SUCH ITEMS. ALL MATERIAL SHALL BE UL LISTED.

B SERVICE CONDITIONS

1. ALTITUDE- 2100 FEET

2. TEMPERATURE

a. INDOOR - 40 DEGREE C (100 DEGREE F)

b. OUTDOOR - 60 DEGREE C (140 DEGREE F)

C CONDUITS

1. INTERIOR CONDUIT SHALL BE EMT WITH COMPRESSION OR SET SCREW FITTINGS.

2. LIQUID-TITE FMC SHALL BE USED FOR FINAL CONNECTION TO MOTORS.

3. MC CABLE MAY NOT BE USED.

D CABLE

1. CONDUCTORS SHALL BE TYPE THHN/THWN 75 DEGREE WIRE.

2. CONDUCTORS SHALL BE COPPER.

a. EQUIVALENT ALUMINUM WIRE (8000 ALLOY) MAY BE USED IN LIEU OF COPPER FOR SIZES #1/0 AND LARGER. USE COMPRESSION FITTINGS ON ALL CONNECTIONS AND RESIZE CONDUIT AS REQUIRED. SUBMIT SIZING TO ENGINEER FOR REVIEW.

3. MINIMUM WIRE SIZE SHALL BE #12 AWG.

a. 120V BRANCH CIRCUITS OVER 65 FEET IN LENGTH FROM THE CENTER OF THE LOAD TO THE PANEL SHALL BE #10 AWG AND BRANCH CIRCUITS OVER 130 FEET SHALL BE #8 AWG. INCREASE CONDUIT AND WIRE SIZES AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.

4. UNLESS OTHERWISE REQUIRED BY LOCAL ORDINANCES GROUND WIRES SHALL BE GREEN, NEUTRAL WIRES SHALL BE WHITE (120V) OR GRAY (277V) AND PHASE WIRES SHALL BE BLACK (PHASE A), RED (PHASE B), AND BLUE (PHASE C) FOR A 120/208 VOLT SYSTEM AND BROWN (PHASE A), ORANGE (PHASE B), AND YELLOW (PHASE C) FOR A 277/480 VOLT SYSTEM.

E OVERCURRENT PROTECTION DEVICES:

1. CIRCUIT BREAKERS SHALL BE OF THE SAME MANUFACTURES AS PANELBOARDS AND SWITCHBOARDS. PROVIDE BREAKERS AS NOTED ON THE SCHEDULE.

2. FUSES USED TO PROTECT MOTORS SHALL BE BUSSMAN TYPE FRN-R. ALL FUSES INSTALLED IN FUSED DISCONNECTS SHALL BE CLASS R UNLESS NOTED OTHERWISE.

3. PROVIDE HACR RATED BREAKERS FOR MECHANICAL EQUIPMENT.

F PROVIDE GROUNDING FOR ALL BRANCH CIRCUITS. CONDUIT, LISTED FOR USE, MAY BE USED FOR GROUNDING FOR 20A BRANCH CIRCUITS ONLY WHEN APPROVED FOR SUCH USE. ALL FMC AND NON-METALLIC CONDUIT SHALL HAVE A SEPARATE GROUND WIRE.

G OUTLET, PULL AND JUNCTION BOXES

1. EACH SWITCH, LIGHT, RECEPTACLE OR OTHER OUTLET SHALL BE PROVIDED WITH A CODE GAUGE, GALVANIZED STEEL OUTLET BOX. JUNCTION AND PULLBOXES SHALL BE CODE GAUGE, GALVANIZED STEEL. OUTLET BOXES SHALL BE OF THE ONE PIECE, KNOCKOUT TYPE, IN GENERAL 4" SQUARE WITH PLASTER RING. PLASTER RINGS SHALL BE SET TO PROVIDE NOT MORE THAN 1/8" FROM WALL SURFACE TO RING. IN NO CASE SHALL PLASTER RING PROJECT BEYOND SURFACE OF WALL. SINGLE GANG RINGS SIMILAR TO STEEL CITY 52-C-50 SHALL BE USED FOR 4" BOXES IN UNFINISHED BRICK. RACO 3150 BOXES MAY BE USED FOR UNFINISHED MASONRY FLUSH WALL OUTLETS. CENTER ALL OUTLET BOXES IN BLOCK COURSE AND PROVIDE A SMOOTH FINISH BLOCK AT OUTLET LOCATIONS.

PART 3 - EXECUTION

3.1 INSTALLATION

A EQUIPMENT LOCATIONS SHALL BE AS CLOSE AS PRACTICAL TO LOCATIONS SHOWN ON THE PLAN DRAWINGS AND SUBJECT TO SUCH APPROVED REVISIONS AT NO COST TO THE OWNER AS MAY BE FOUND NECESSARY OR DESIRABLE AT THE TIME WORK IS INSTALLED.

B CLOSE ALL OPENINGS IN WALLS, FLOORS, AND ROOFS TO THE APPROVAL OF THE ARCHITECT.

C PAINT ALL CONDUITS AND BOXES THAT ARE REQUIRED TO BE EXPOSED TO MATCH BUILDING SURFACES. RUN ALL EXPOSED CONDUIT PARALLEL AND PERPENDICULAR TO BUILDING LINES.

D PROVIDE ENGRAVED PHENOLIC NAMEPLATES ON ALL EQUIPMENT AND INSTALL TYPED DIRECTORY IN PANELBOARDS. FASTEN NAMEPLATES WITH SCREWS OR RIVETS, DO NOT USE ADHESIVE.

E COORDINATE THE WORK WITH OTHER TRADES.

F MEGGER TEST ALL FEEDER CIRCUITS AFTER INSTALLATION.

G INSTALL SWITCHES AT 48" AFF AND RECEPTACLES AT 18" AFF UNLESS NOTED OTHERWISE.

H CONDUITS AND OUTLETS SHALL BE CONCEALED WITHIN THE BUILDING STRUCTURE; EXCEPT THAT CERTAIN MOTOR AND LIGHTING FEEDER CONDUITS MAY BE RUN EXPOSED IN CERTAIN AREAS AS INDICATED ON THE DRAWINGS. CONDUIT AND OUTLETS SHOWN TO BE INSTALLED IN CABINETS, COUNTERS, AND CASEWORK SHALL BE RUN OR INSTALLED AS DIRECTED BY THE ARCHITECT.

I FLOOR MOUNTED ELECTRICAL EQUIPMENT SHALL BE MOUNTED ON A 4" HIGH HOUSEKEEPING PAD EXTENDING 6" BEYOND EQUIPMENT.

J PATCH AND REPAIR AREA WHERE ITEMS HAVE BEEN DEMOLISHED OR DAMAGED DURING CONSTRUCTION TO MATCH ADJACENT SURFACES TO OWNER'S APPROVAL.

K CONDUITS PENETRATING FLOOR SLABS SHALL BE INSTALLED A MINIMUM OF 2" AFF.

L LABEL ALL SPARE CONDUITS/PULLSTRINGS AT BOTH ENDS WITH IDENTIFICATION OF LOCATION AT THE OPPOSITE END.

M A COMPLETELY AND THOROUGHLY SWAB RACEWAY BEFORE INSTALLING WIRE.

N REQUEST INSPECTIONS FROM LOCAL GOVERNING AUTHORITIES.

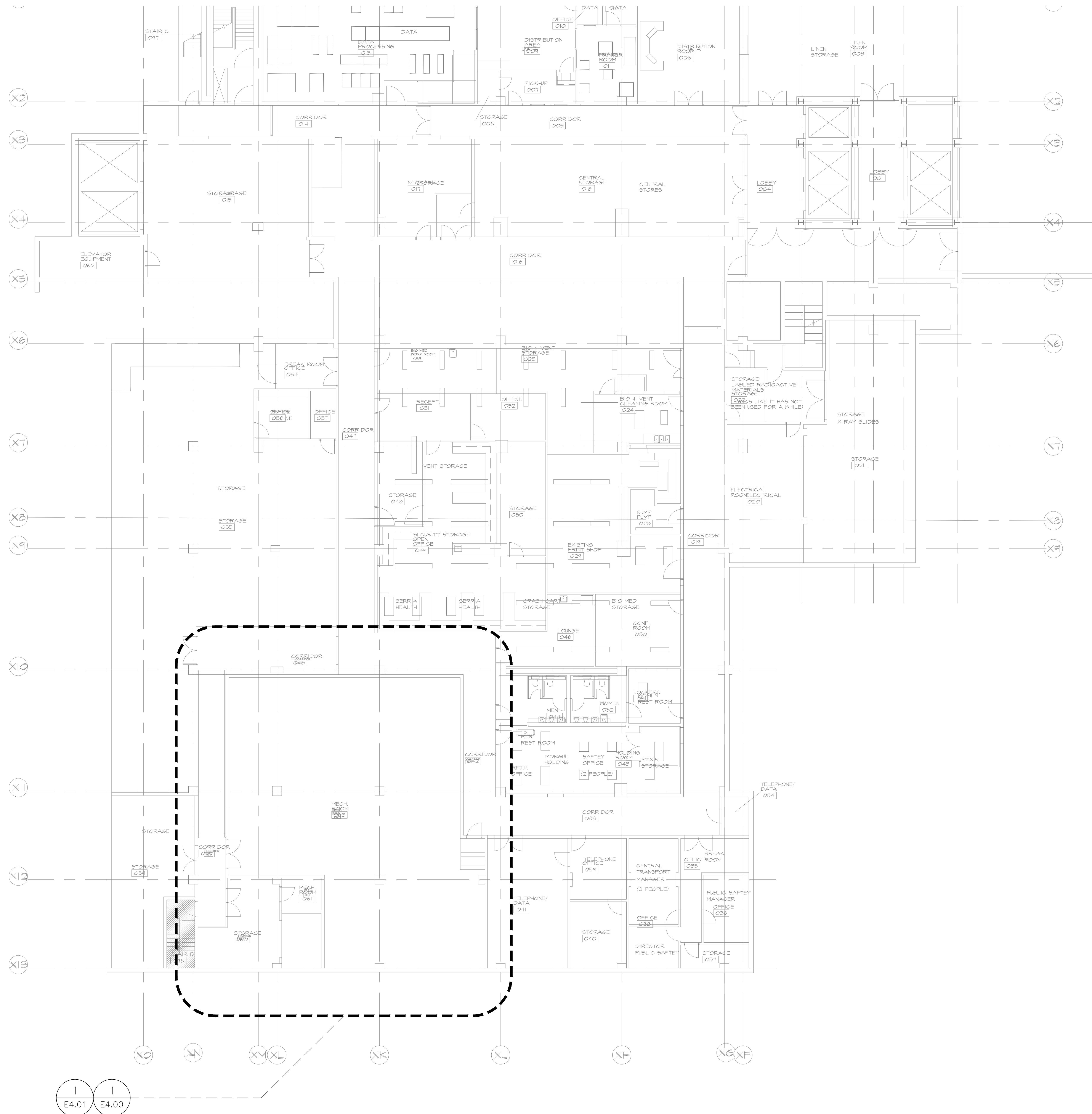
3.2 PROJECT COMPLETION

A REMOVE ALL DISCARDED MATERIALS FROM DEMOLITION AND INSTALLATION FROM THE JOB SITE.

B PROVIDE REPRODUCIBLE RECORD DRAWINGS OF ALL COMPLETED WORK.

C GUARANTEE ALL MATERIAL FURNISHED AND ALL WORKMANSHIP PERFORMED FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK. ANY DEFECTS DEVELOPING WITHIN THIS PERIOD, TRACEABLE TO MATERIAL FURNISHED AS A PART OF THIS SECTION OR WORKMANSHIP PERFORMED HEREUNDER, SHALL BE MADE GOOD AT NO ADDITIONAL EXPENSE TO THE OWNER.

'END OF SECTION'



1 ELECTRICAL PLAN BASEMENT
SCALE: 1/8" = 1'-0"

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Prime
THOMAS M. ANDERSON
Exp. 12-31-18
ELECTRICAL
No. 13949
September 21, 2015
Consultant

Project
UMC

NORTHEAST BUILDING MEDICAL AIR PUMPS
UNIVERSITY MEDICAL CENTER
LAS VEGAS, NEVADA

Drawing Title:
**ELECTRICAL
PLAN
BASEMENT**

Revisions:
Date: 04-17-15
HSAA Project:
CADD Files:
Drawing Number:

E2.01

NORTHEAST BUILDING MEDICAL AIR PUMPS
UNIVERSITY MEDICAL CENTER
LAS VEGAS, NEVADA

Revisions:

Date: 04-17-15

ISAA Project:

ADD Files:

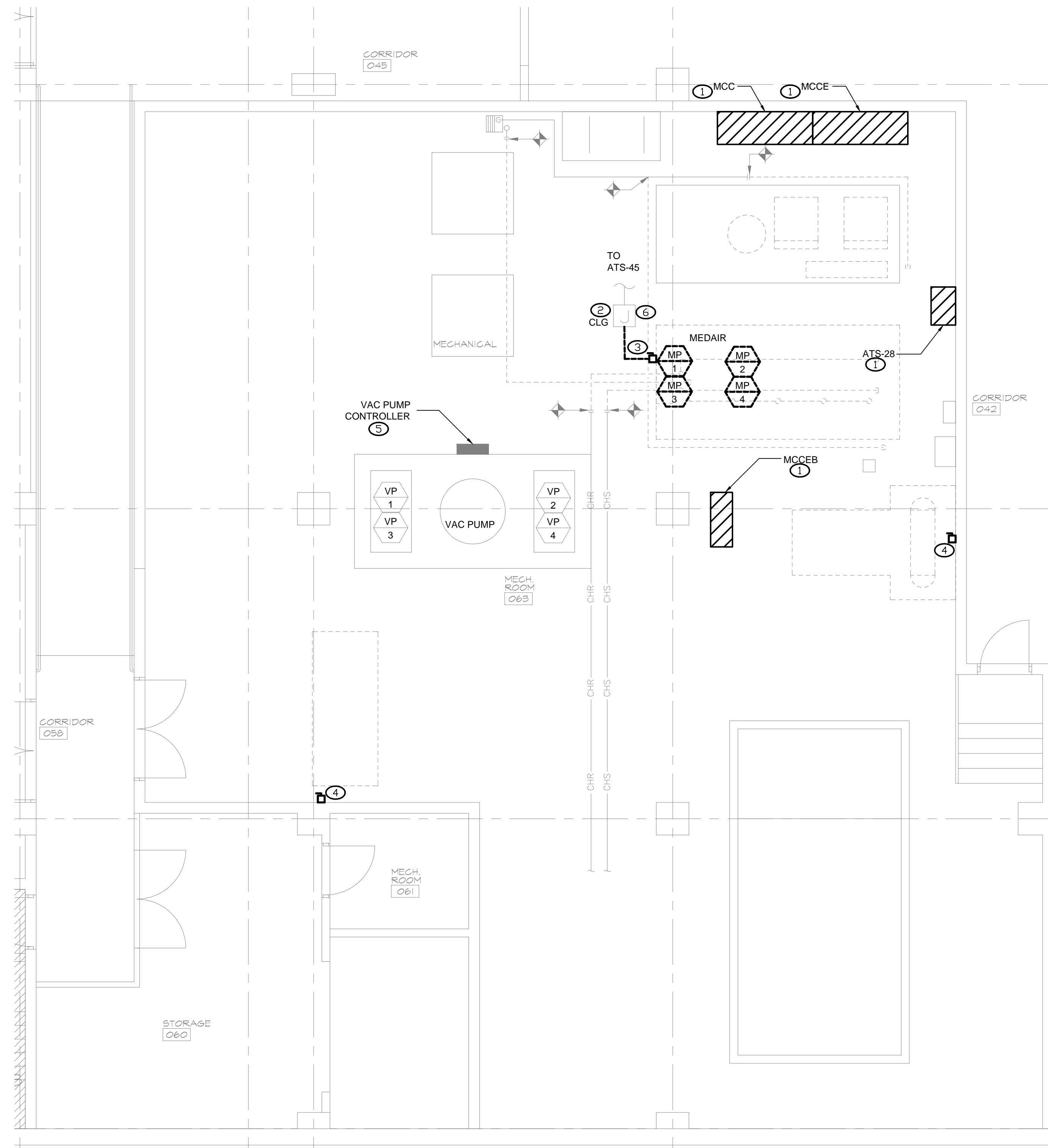
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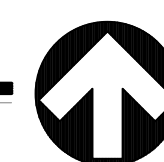
1. ALL EQUIPMENT SHALL REMAIN OPERATIONAL DURING CONSTRUCTION UNLESS OWNER ALLOWS FOR EQUIPMENT TO BE TURNED OFF. COORDINATE ALL OUTAGES IN WRITING TWO WEEKS PRIOR WITH OWNER.

1. ALL CONDUIT AND WIRING FROM REMOVED DEVICES SHALL BE REMOVED BACK TO SOURCE.
2. PROVIDE POWER CONTINUATION TO DOWN STREAM DEVICES.
3. CONDUIT IN INACCESSIBLE LOCATIONS SHALL BE CAPPED OFF AND TO REMAIN IN PLACE.
4. WIRING SHALL NOT BE ABANDONED IN INACCESSIBLE CONDUITS.
5. PROVIDE UPDATED, TYPED PANEL DIRECTORIES FOR ALL PANEL BOARDS WITH CIRCUITS MODIFIED, ADDED OR REMOVED.

1. EXISTING EQUIPMENT TO REMAIN. REFER TO ONELINE FOR MORE INFORMATION.
2. EXISTING CEILING MOUNTED J-BOX TO REMAIN.
3. REMOVE MED AIR PUMPS CONTROLLER AND ASSOCIATED CONDUIT AND WIRING TO PUMPS.
4. REMOVE DISCONNECT AND ALL ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE.
5. REMOVE WIRING AND CONDUIT BACK TO SOURCE. CONTROLLER TO REMAIN IN PLACE.
6. INTERCEPT EXISTING FEEDER AND PREPARE TO EXTEND TO VAC PUMP.



1 ENLARGED DEMOLITION POWER PLAN - BASEMENT
SCALE: 1/4" = 1'-0"



Professional Engineer-State of Nevada
 THOMAS M. ANDERSON
 Exp: 12-31-18
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 No. 13946
 September 21, 2015

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Revisions:

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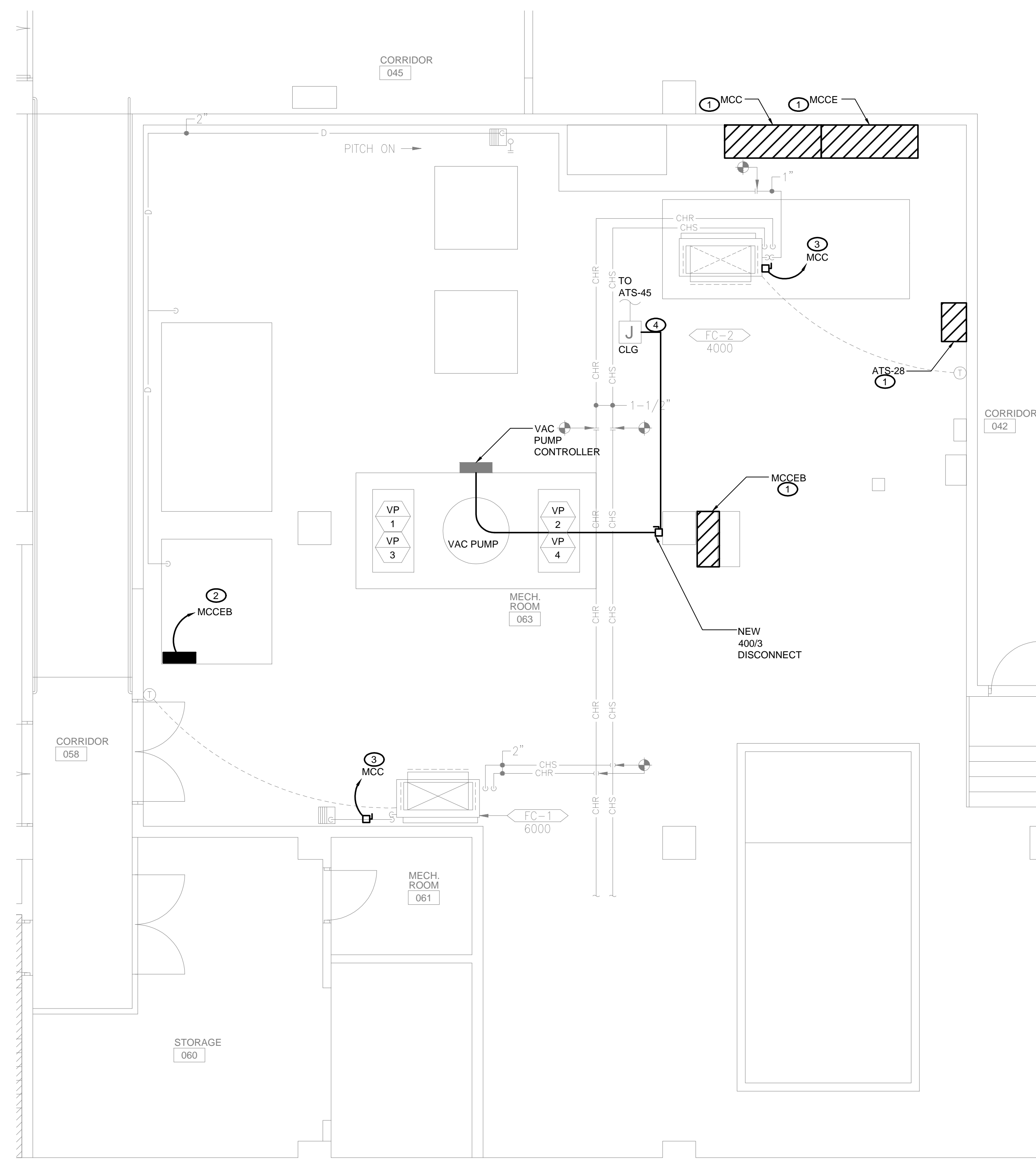
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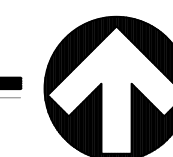
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1. ALL CONDUIT AND WIRING FROM REMOVED DEVICES SHALL BE REMOVED BACK TO SOURCE.
2. PROVIDE POWER CONTINUATION TO DOWN STREAM DEVICES.
3. CONDUIT IN INACCESSIBLE LOCATIONS SHALL BE CAPPED OFF AND TO REMAIN IN PLACE.
4. WIRING SHALL NOT BE ABANDONED IN INACCESSIBLE CONDUITS.
5. PROVIDE UPDATED, TYPED PANEL DIRECTORIES FOR ALL PANEL BOARDS WITH CIRCUITS MODIFIED, ADDED OR REMOVED.
6. ALL SIDEWALK PANELS REMOVED SHALL BE REMOVED FROM EXPANSION JOINT TO EXPANSION JOINT. REPAIR TO MATCH ADJACENT SURFACES.
7. EXISTING IRRIGATION SYSTEM TO REMAIN. PROTECT IN PLACE.
8. IN LOCATIONS WHERE TRENCHING IS INDICATED ON EST 01, REMOVE ALL SPOILS FROM THE SITE AND REPAIR SURFACES TO MATCH ADJACENT.

1. EXISTING EQUIPMENT TO REMAIN.
2. CONNECT TO MCCB. REFER TO ONLINE DIAGRAM FOR FEEDER SIZE.
3. CONNECT TO MCC. REFER TO ONLINE DIAGRAM FOR FEEDER SIZE.
4. INTERCEPT FEEDER AND EXTEND TO VAC PUMP CONTROLLER. REFER TO ONLINE DIAGRAM FOR FEEDER SIZE.



1 ENLARGED POWER PLAN - BASEMENT
SCALE: 1/4" = 1'-0"



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ELECTRICAL ONE LINE DIAGRAM

Drawing Number:

